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A remarkable new species of *Vietomartyria* Hashimoto & Mey (Lepidoptera, Micropterigidae) from South China

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Abstract A new micropterigid, *Vietomartyria gladiator* Hirowatari & Huang sp. nov., is described from Nankunshan, Guangdong, China. Two species, *Paramartyira jinggangana* Yang, 1980 and *P. baishanzuna* Yang, 1995 are newly transferred to the genus *Vietomartyria* Hashimoto & Mey, 2000, with the result that the genus now comprises six species. We consider that *Vietomartyria gladiator* represents the presently known sister-group of a clade consisting of the other five species. A check list of *Vietomartyria* is provided.

Key words *Vietomartyria*, Micropterigidae, taxonomy, Nankunshan, China.

Introduction

Hashimoto and Mey (2000) established a monotypic genus *Vietomartyria* for *Paramartyria expeditionis* Mey, 1997 from N. Vietnam. Subsequently, Hirowatari *et al.* (2009) described two new species, *V. nankunshana* and *V. nanlingana* from S. China. In 2006, we collected a conspicuous micropterigid moth in Nankunshan, Guangdong, South China. Although the male genitalia had an unusual shape (*e.g.* a sword-like process on the anal cone sclerite, the short rectangular valva, and the strong sclerotization and complete fusion of ring IX and tergite X) initially suggesting the possibility of a distinct new genus, detailed examination of the morphological characters led us the conclusion that it should be placed in *Vietomartyria*.

In the present study, a new species of *Vietomartyria* is described and a check list of the genus is provided.

Materials and methods

Specimens were collected in Nankunshan, Guangdong Province, South China in March 2006, and are deposited in the collection of the Department of Entomology, South China Agricultural University (SCAU), China, and the Entomological Laboratory, Osaka Prefecture University (OPU), Japan.

Wing venation was observed after staining by acetocarmine solution. Male and female genitalia were dissected after maceration for 4–5 minutes in 10% KOH heated in a waterbath and illustrated using a binocular microscope. The microstructure of the adult antenna was observed by scanning electron microscopy (HITACHI SU1510).

Terminology used in this paper follows Kristensen and Nielsen (1979) and Hashimoto and Mey (2000).

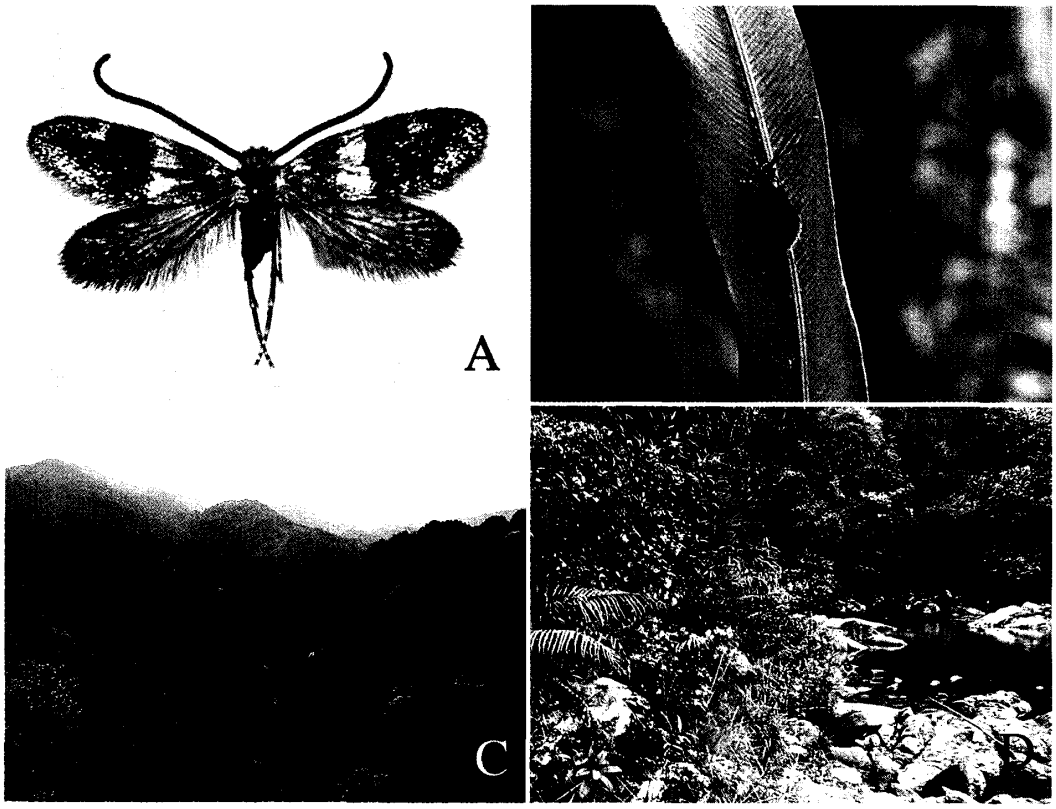

Fig. 1. Adult and habitat of *Vietomartyria gladiator* Hirowatari & Huang sp. nov. A. Holotype ♂. B. A male perching on fern. C, D. Habitat.

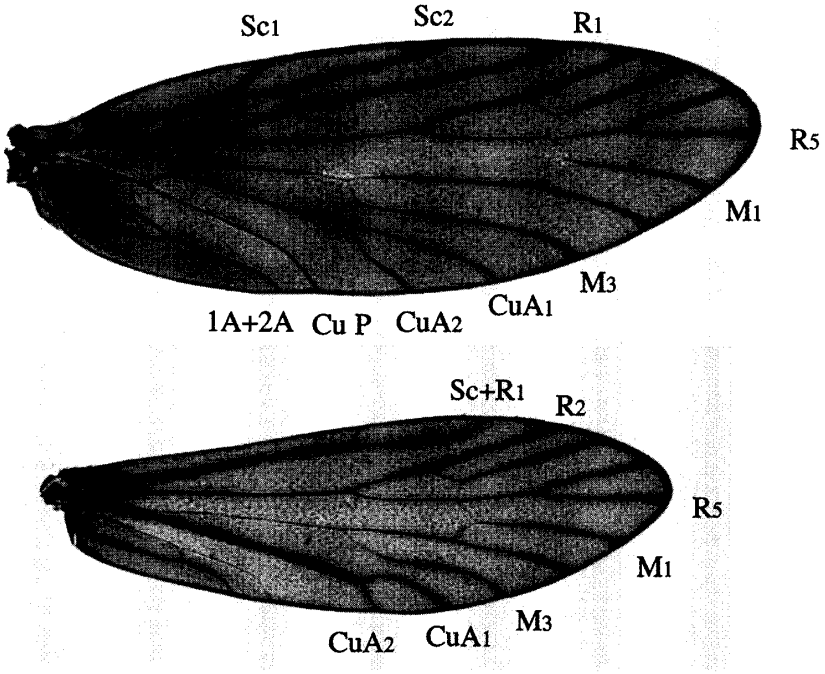

Fig. 2. Wing venation of *Vietomartyria gladiator* Hirowatari & Huang sp. nov. Paratype ♂.

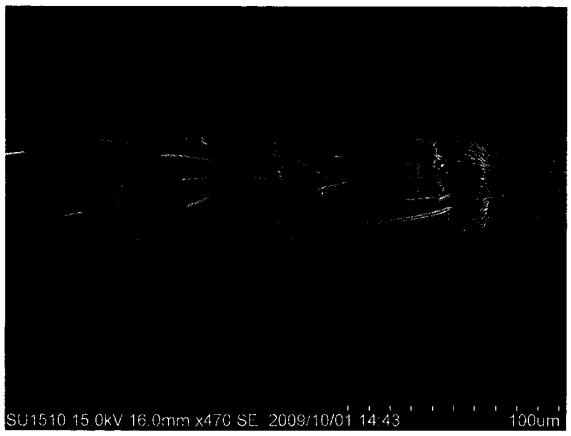

Fig. 3. Antennal fllagellomeres of *Vietomartyria gladiator* Hirowatari & Huang sp. nov. ♂.

Vietomartyria gladiator Hirowatari & Huang **sp. nov.** (Figs 1–5)

Male. Forewing length 3.7–4.1 mm, 4.0 mm (holotype). Wing expanse 7.5–9.0 mm, 8.9 mm (holotype).

Head densely covered with long piliform scales except for an exposed part between compound eye, base of antenna and ocellus; tufts of scales uniformly orange. Maxillary palpus pale yellow. Antennal scape and pedicel with orange hair-like scales; flagellum 52-segmented (holotype), covered with dense black hairy scales. Basal stalk of each flagellomere long (Fig. 3). Thorax tegular tufts of piliform orange scales; mesonotum densely covered with broad golden scales. Legs ochreous with purplish tinge; fore and mid femur and terminal band of tibial and each tarsal segment pale yellow. Forewing ground color dark brown with purple luster, basal 1/3 with a broad golden stria, and a metallic blue luster along costa; some golden scales scattered near termen; cilia ochreous. Sc-R crossvein present at base, Sc1-R1 crossvein indistinct (Fig. 2). Hindwing dark purplish fuscous; cilia ochreous. Pregenital abdomen grayish brown, covered with glossy fuscous scales. Genital segments brown to dark brown, covered with glossy dark brown scales; terminal margins of paired X tergal lobes glossy brown.

Male genitalia (Fig. 4). Ring IX and tergite X strongly sclerotized and fused. Dorsal part of ring IX (tegumen) short, about 1/7 length of ventral part (vinculum). Tergite X semicircular, an emarginated spine at middle posteriorly; paired short spines at posterior corners. Anal cone sclerite shield-like, with a prominent sword-like process ventrally. Gonopod (valva) rectangular, length equal to dorsal part of ring IX + tergite X; dorsal corner rounded without pointed process. Phallobase slender, 3/5 × as long as aedeagus; phallobase with an indistinct longitudinal keel on ventral median line at posterior 1/3. Many minute, serrate projections present near gonopore of aedeagus. Gonopore situated dorsally on basal 1/3 of aedeagus.

Female. Scaling similar to male. Forewing length 3.6 mm. Wing expanse 7.3 mm.

Female genitalia (Fig. 5). Segment IX sclerotized, short in dorsal part (about 1/2 length of ventral part), with three minute median projections posteriorly. Segment X a pair of rectangular plates with minute projections along posterior margin. Corpus bursae membranous, short, ellipsoidal; signa absent.

Material examined. Holotype ♂,"Nankunshan (23°38′N, 113°50′E), Guangdong, China, 430 m altitude , 18. iii. 2006, G. H. Huang *et al.*" Deposited in SCAU, China.

Paratypes, 7♂, 17–18. iii. 2006, 2♂, 28. iii. 2006, same locality as holotype (in SCAU); 6♂1♀,

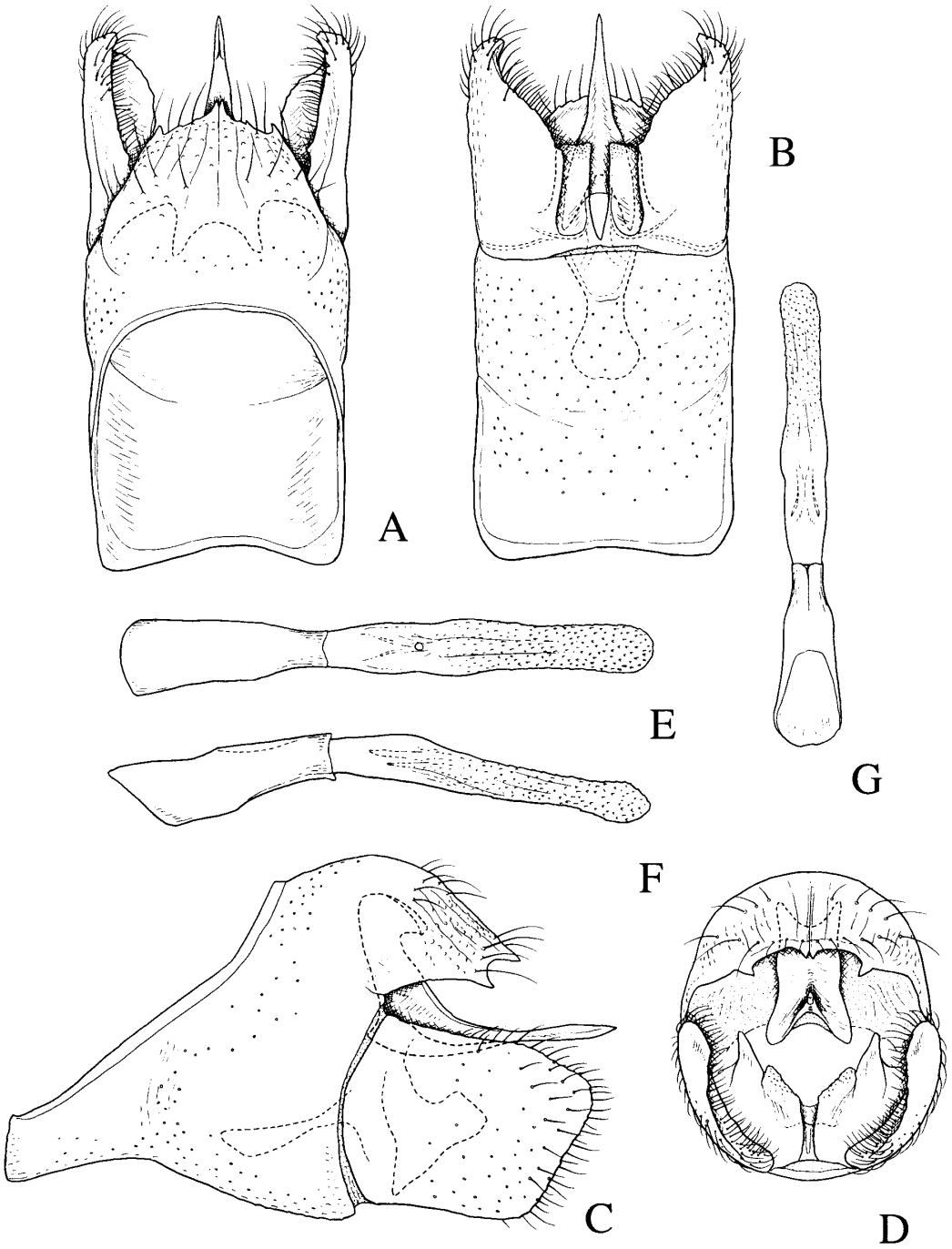

Fig. 4. Male genitalia of *Vietomartyria gladiator* Hirowatari & Huang sp. nov. Holotype. A. Dorsal view, with phallus removed. B. *Ditto*, ventral view. C. *Ditto*, lateral view. D. *Ditto*, posterior view. E. Phallus, dorsal view. F. *Ditto*, lateral view. G. *Ditto*, ventral view.

17–18. iii. 2006, 1♂, 28. iii. 2006 same locality as holotype (in OPU).

Biology. Adults of *V. gladiator* were observed flying or perching on low shrubs and ferns (Fig. 1B) along a stream in a valley at 430 m elevation (Fig. 1C, D). The habitat of this species was relatively moist in contrast to the principle habitat type of *V. nankunshana*, a dry mountain road at a higher elevation of 550 m. Some individuals of *V. nankunshana* flew with *V. gladiator* in the valley, but no individual of *V. gladiator* was found along the dry mountain road.

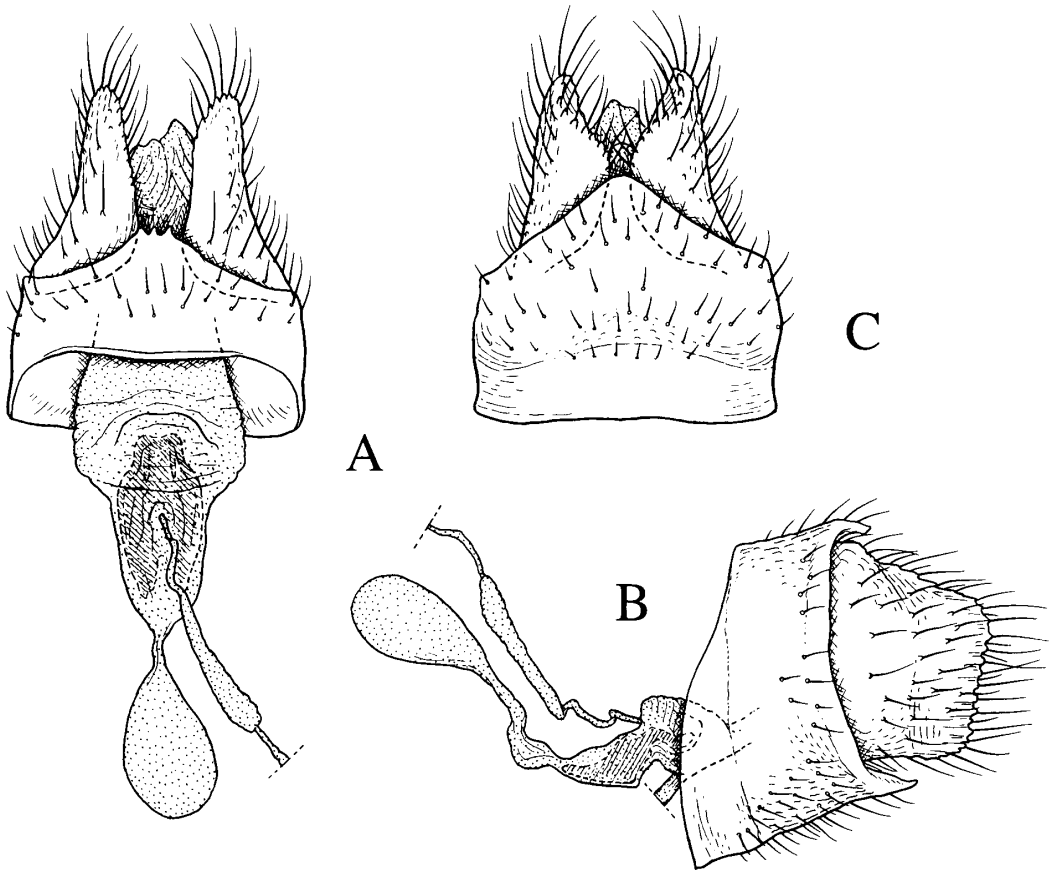

Fig. 5. Female genitalia of *Vietomartyria gladiator* Hirowatari & Huang sp. nov. Paratype. A. Terminalia and bursa copulatrix, dorsal view. B. *Ditto*, lateral view. C. Terminalia, ventral view.

Distribution. South China (Nankunshan, Guangdong).

Etymology. From the Latin gladiator (= sword-carrier), referring to the male genitalia bearing the sword-like process on the anal cone sclerite.

Discussion

We place the present new species in *Vietomartyria* because it has the following generic autapomorphies (Hashimoto and Mey, 2000; Hirowatari *et al.* 2009): basal stalk of each flagellomere long, many (more than 100) minute, serrate projections present near gonopore of aedeagus, and gonopore situated dorsally near apex.

Hashimoto (2006) noted that *Paramartyria baishanzuna* Yang, 1995 and *P. jinggangana* Yang, 1980 may possibly belong to *Vietomartyria* judging from the shape of the valvae. Subsequently, Hirowatari *et al.* (2009) suggested that *V. nankunshana* and *V. nanlingana* were closely related to *P. baishanzuna* and *P. jinggangana*, respectively, mainly based on the structure of the male genitalia. Although the specimens described by Yang were not available for examination, we transfer *P. baishanzuna* and *P. jinggangana* to *Vietomartyria* as a step towards more detailed studies on these groups of species. A possible synapomorphy for these five species is the dorsal hook-like projection of the gonopod (valva). On this basis, we consider that *Vietomartyria gladiator* represents the sister-group of a clade consisting of the other five species, judging from the absence of the dorsal projection of the gonopod.

Check list

Vietomartyria Hashimoto & Mey, 2000

Vietomartyria expeditionis (Mey, 1997)

Paramartyria expeditionis Mey, 1997: 14 (Type locality: Fan-si-pan Mt., N. Vietnam)
Vietomartyria expeditionis: Hashimoto & Mey, 2000: 43.

Distribution: Vietnam.

Vietomartyria nanlingana Hirowatari & Jinbo, 2009

Vietomartyria nanlingana Hirowatari & Jinbo, 2009: 70 (Type locality: Nanling, Guandong, S. China)

Distribution: China (Guandong).

Vietomartyria jinggangana (Yang, 1980) **comb. nov.**

Paramartyria jinggangana Yang, 1980: 119 (Type locality: Jinggangshan, Jiangxi, China)

Distribution: China (Jiangxi).

Vietomartyria baishanzuna (Yang, 1995) **comb. nov.**

Paramartyria baishanzuna Yang, 1995: 296 (Type locality: Baishanzu, Zheijiang, China)

Distribution: China (Zheijiang).

Vietomartyria nankunshana Hirowatari & Hashimoto, 2009

Vietomartyria nankunshana Hirowatari & Hashimoto, 2009: 68 (Type locality: Nankunshan, Guandong, S. China)

Distribution: China (Guandong).

Vietomartyria gladiator Hirowatari & Huang **sp. nov.**

(Type locality: Nankunshan, Guandong, S. China)

Distribution: China (Guandong).

Acknowledgments

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摘　　要

中国南部で発見された*Vietomartyria*属（コバネガ科）の注目すべき1新種（広渡俊哉・黄　国華・橋本里志・王　敏）

*Vietomartyria*属は，1997年にベトナムから記載された*Paramartyria expeditionis* Meyをもとに，Hashimoto & Meyによって2000年に設立された．その後，Hirowatari *et al.* (2009)が中国広東省のほぼ中央に位置する南昆山から*V. nankunshana*，広東省北部の湖南省との省境に位置する南嶺から*V. nanlingana*の2新種を記載した．筆者らは2006年に*V. nankunshana*のタイプ産地である南昆山で，斑紋と♂交尾器が特異なコバネガ科の一種を採集していたが，詳しい形態を調査した結果，この種も*Vietomartyria*属の固有派生形質（触角鞭節の各節基部に長い柄を有する，♂の生殖口の周辺に多数の微細な棘状突起をもつ，♂の生殖口が末端から離れた背方に位置する）を持つことが判明したため，新種 *V. gladiator* Hirowatari & Huangとして記載した．また，江西省井岡山と浙江省百山祖からそれぞれ記載された*Paramartyira jinggangana* Yang, 1980と*P. baishanzuna* Yang, 1995については標本を検することはできなかったが，原著論文に示された特徴から*Vietomartyria*属に所属を変更した．この結果，*Vietomartyria*属は6種を含むことになった．

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